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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,039	05/30/2001	Cristian Tabacutu	NC25779	6741

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 09/870,039	<b>Applicant(s)</b> TABACUTU, CRISTIAN	
	<b>Examiner</b> Ishwar (I. B.) Patel	<b>Art Unit</b> 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-14, drawn to a connector, classified in class 174, subclass 260.
  - II. Claims 15-20, drawn to a method of connecting an electrical circuit component, classified in class 29, subclass 832.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as the product can be made by applying the energy in the form of tension or torsion force as disclosed on page 6, line 1-10 of the specification.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

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4. During a telephone conversation with Steve Wise (40,880) on October 14, 2002, a provisional election was made with traverse to prosecute the invention of group I, claims 1-14. Applicant in replying to this Office action must make affirmation of this election. Claims 15-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is not clear what is meant by "facilitating maintenance of connection of electronic circuit component". Whether, it is allowing to remove the component for repair or allow to carryout any kind of maintenance work on the component.

Regarding claims 1-14, it is not clear whether the substrate is claimed or not. Claim 1 claims the component positionable on the substrate but does not claim substrate. However, the dependent claims claim the detail of the substrate such as indent or hole.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 9-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingo, Japanese Patent JP04132250A, in view of Hikami et al., US Patent 5,059,133, hereafter Hikami.

Regarding claim 1 and 6, Shingo discloses a component with connector, comprising: at least a first pin member affixed to the electrical circuit component to form a portion thereof, said first pin member affixed to extend downwardly beneath a bottom surface of electronic circuit component, thereby to engage with the substrate when substrate when the electronic circuit component is seated upon the substrate, said first pin member of a first configuration (Leads 2 with contact portion 2a, see figure 1 and 2), the lead reshaped to second configuration to facilitate connection of the lead to the circuit board (second shape with compression), except fail to explicitly disclose the reconfiguration is done by the heating the lead. However, shape memory recovery spring material is known in the art for recovering the original configured shape to have easy connection of the component with the board. Hikami discloses one such connector member with shape memory recovery characteristic to have a connector facilitating mounting of electronic component. Therefore, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to provide the connector of Shingo with pin configurable with heat in order to have connection of component with the substrate. Further, the reconfiguration of the pin by applying heat is a process limitation in a product claim. Such a process limitation defines the claimed invention over the prior art only to the degree that it defines the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is same as, or obvious over, the prior art. See Product – by – Process in MPEP 2113 and 2173(p) and *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 9, Shingo further disclose the substrate with through hole, see figure 2.

Regarding claim 10, Shingo further, discloses the first pin defines a proximal side portion affixed to the electronic circuit component and the distal side portion extending beyond the substrate, see figure 2.

Regarding claim 13, the modified assembly of Shingo further discloses conductive pin and electrically conductive circuit path in the through hole, see figure 2.

Regarding claim 14, the modified assembly of Shingo further discloses electrical and mechanical connection of component with the substrate, see figure 2.

Regarding claims 2-5, the modified assembly of Shingo discloses all the features of the claimed invention as applied to claims 1, 9 -14 above except the substrate has holes instead of indent or blind via or conductive pad. However, substrate with such blind vias are known in the art to have better routing of the traces. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the modified connector of Shingo with a circuit board with indent instead of via holes in order to have a better trace routing in the circuit board.

9. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingo, Japanese Patent JP04132250A, in view of Hikami et al., US Patent 5,059,133, hereafter Hikami, as applied to claims 1,6 and 9-14 above, and further in view of Kile, US Patent 5,366,381.

Regarding claims 7 and 8, the applicant is claiming a camber leg forming shape of the pin. Though, Shingo does not explicitly disclose a camber leg configuration leg, the crux of the invention of Shingo is to provide a curved shape, which can be compressed / reconfigured to create a force for making electrical connection. Further, Kile disclose a camber leg shape pin for a connector retention of the connector on the substrate. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the connector of Shingo with camber leg type pin in order to retain the component connected with the substrate.

10. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Shingo, Japanese Patent JP04132250A, in view of Hikami et al., US Patent 5,059,133, hereafter Hikami, as applied to claims 1,10-11 above, and further in view of Fanning, US Patent 4,541, 034.

Regarding claim 11, though the modified assembly of Shingo does not disclose foot piece positionable to abut against a bottom face surface of the substrate, the shape of connector will vary depending upon the specific requirement of the assembly and can be given various shape to facilitate the connecting and the retaining the component on the board. Fanning disclose one connector where the lower terminal shank abut the bottom surface of the substrate for securement of the terminal within the through hole. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the modified connector of Shingo with the foot piece positionable to abut a bottom face of the surface in order to secure the component on the substrate.

Regarding claim 12, the modified assembly of Shingo further disclose the connector with the second shape not allowing the connector come out of the through hole.



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***Conclusion***

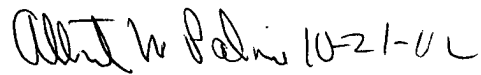
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thevenin, Mitra, Hahn, English, Huynh et al., Kozel disclose circuit assembly similar to applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp  
October 18, 2002

  
**ALBERT W. PALADINI**  
**PRIMARY EXAMINER**